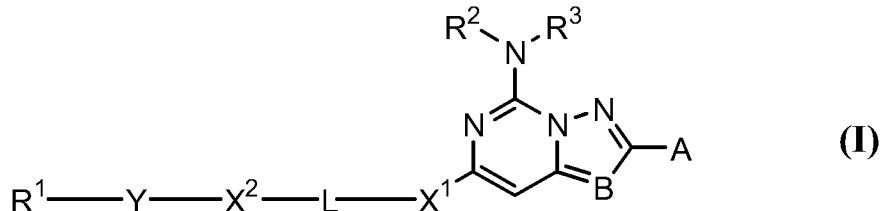


Applicant(s): Chi Vu et al.
U.S.S.N.: 10/552,302

Amendments to the Claims

1. (Currently Amended) A compound of the following formula:

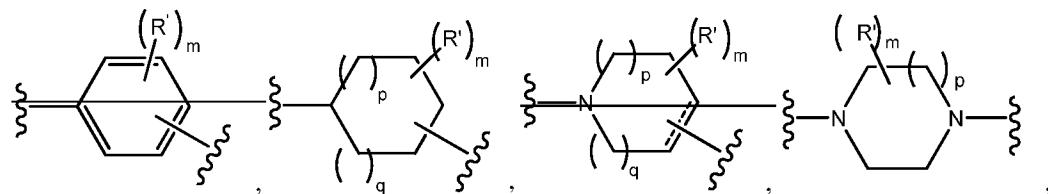


or a pharmaceutically acceptable salt or N-oxide thereof;

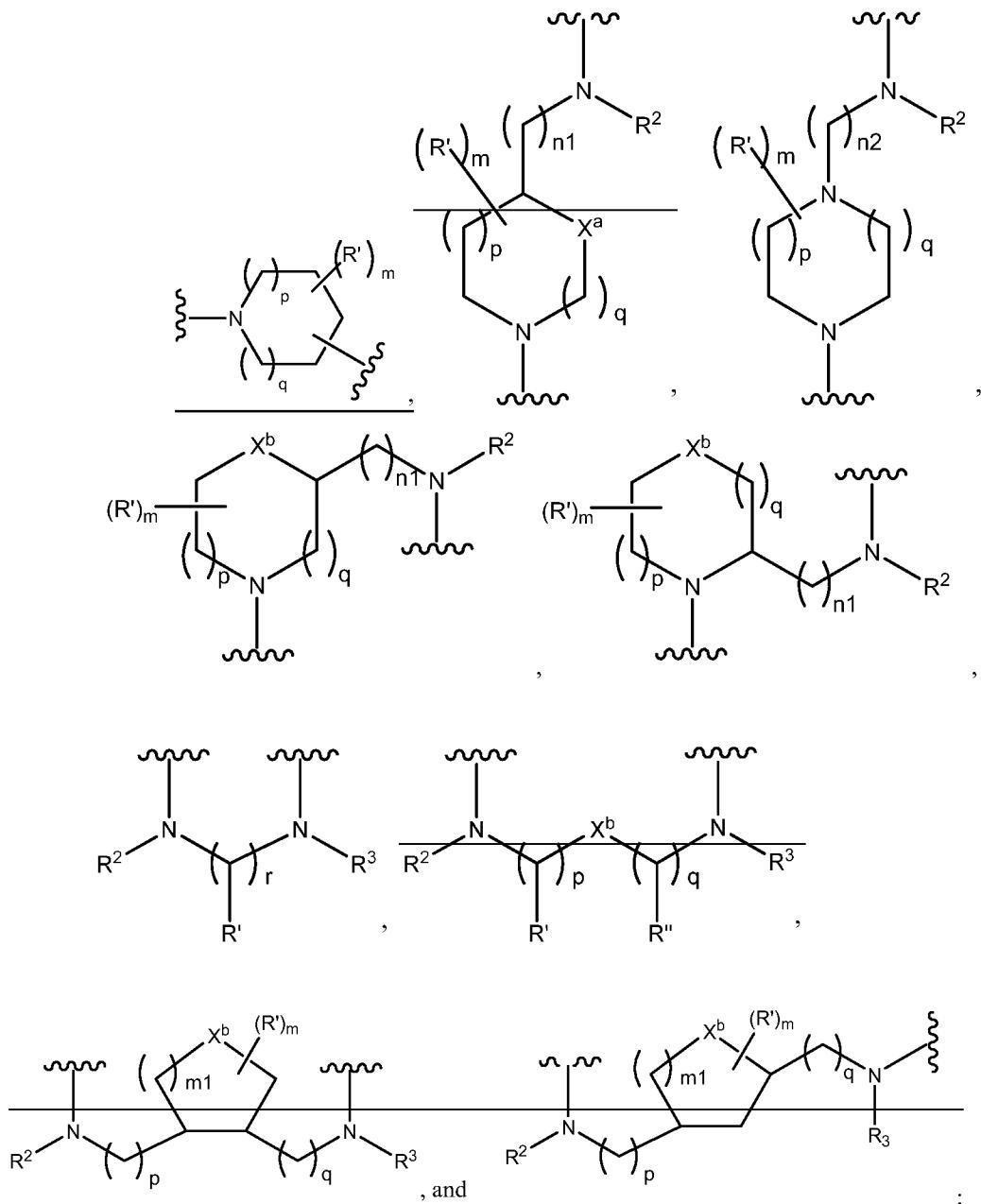
wherein

- A is aryl or heteroaryl;
- B is N or CR²;
- each of R² and R³ is independently hydrogen, alkyl, cycloalkyl, cycloalkenyl, aryl, aralkyl, heterocycloalkyl, heterocycloalkenyl, heteroaryl, or heteroaralkyl;
- each of X¹ and X² is independently C₁₋₆ alkylene, C₂₋₆ alkenylene, C₂₋₆ alkynylene, or a bond;

L is a ~~bond or a~~ linker selected from the group consisting of:



Applicant(s): Chi Vu et al.
U.S.S.N.: 10/552,302



wherein:

each of R' and R'', independently, is hydrogen, alkyl, alkenyl, alkynyl, alkoxy, acyl, halo, hydroxy, amino, nitro, oxo, thioxo, cyano, guanadino, amidino, carboxy, sulfo, sulfoxyl, mercapto, alkylsulfanyl, alkylsulfinyl, alkylsulfonyl, aminocarbonyl, alkylcarbonylamino,

Applicant(s): Chi Vu et al.
U.S.S.N.: 10/552,302

alkylsulfonylamino, alkoxy carbonyl, alkylcarbonyloxy, ~~urea, thiourea~~, sulfamoyl, sulfamide, carbamoyl, cycloalkyl, cycloalkyloxy, cycloalkylsulfanyl, heterocycloalkyl, heterocycloalkyloxy, heterocycloalkylsulfanyl, aryl, aryloxy, arylsulfanyl, aroyl, heteroaryl, heteroaryloxy, heteroarylsulfanyl, or heteroaroyl; provided that two adjacent R' groups can join together to form a 4- to 8-membered optionally substituted cyclic moiety;

X^a is -C(R²)(R³)-, -S-, -SO-, or -SO₂-;

X^b is -C(R²)(R³)-, -NR²-, -O-, -S-, -SO-, or -SO₂-;

each of p, q, m, and m1, is independently 0-3;

r is 1 or 2;

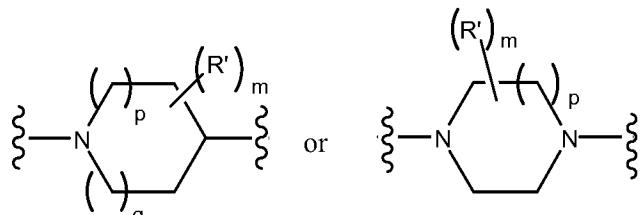
n1 is 0-6; and

n2 is 2-6;

Y is -C(R²)(R³)-, -O-, -S-, -SO-, -SO₂-, -CO-, -CO₂-, or a bond; and

R¹ is alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl, cycloalkenyl, cycloalkenylalkyl, aryl, aralkyl, heterocyclyl, heteroaryl or heterocyclylalkyl;

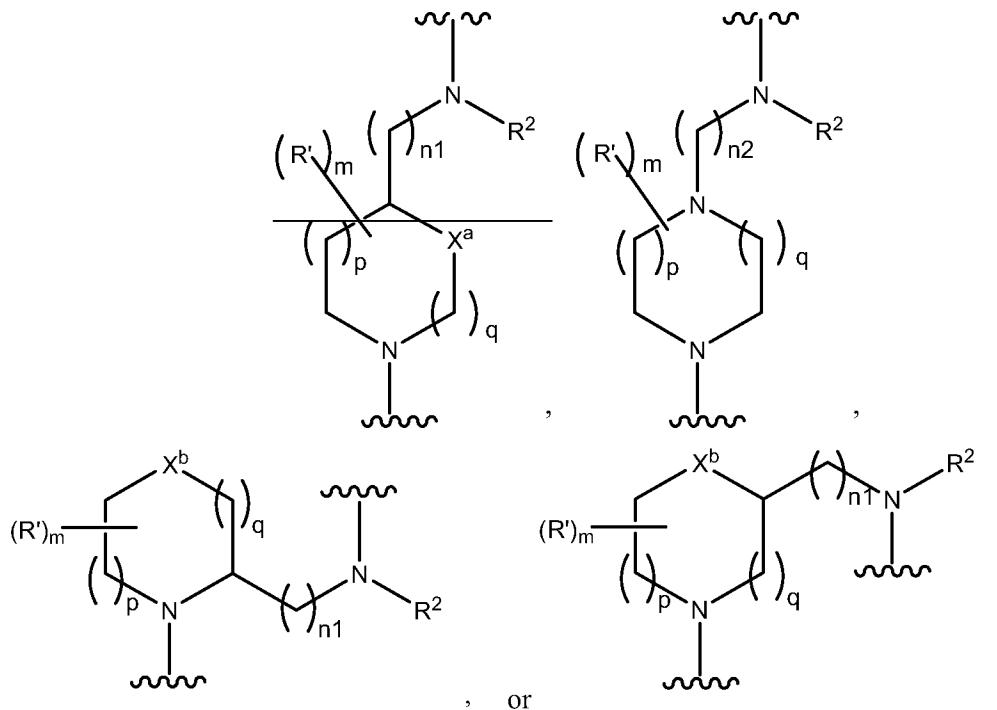
provided that



(1) when L is , then X¹ is C₁₋₆ alkylene,
C₂₋₆ alkenylene, or C₂₋₆ alkynylene;

(2) when L is

Applicant(s): Chi Vu et al.
U.S.S.N.: 10/552,302



then R¹ is aryl or heteroaryl; and

(3) when L is a bond, X¹ is an alkynylene.

2. (Withdrawn) The compound of claim 1, wherein X¹ is C₂₋₆ alkynylene.

3. (Withdrawn, Currently Amended) The compound of claim 2, wherein L is

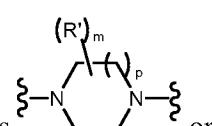
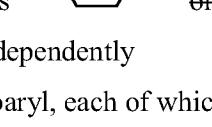
 a bond.

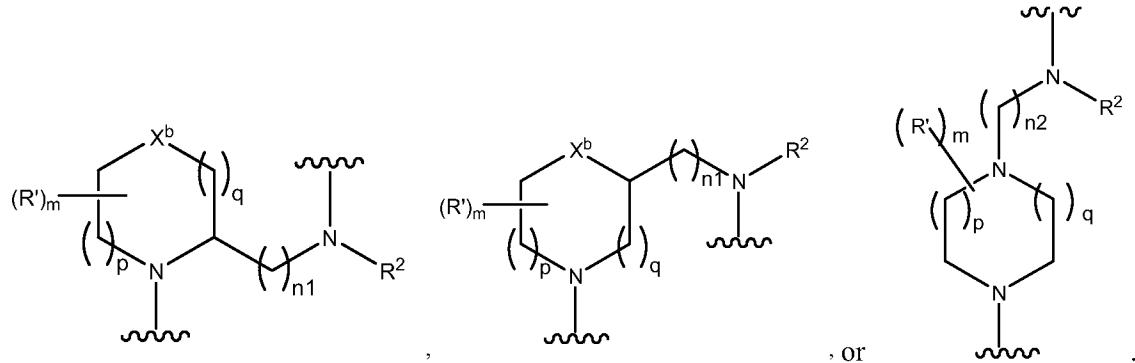
4. (Withdrawn) The compound of claim 2, wherein X² is C₁₋₄ alkylene or a bond.

5. (Withdrawn) The compound of claim 2, wherein Y is a bond.

6. (Withdrawn) The compound of claim 2, wherein each of R² and R³ is independently hydrogen or alkyl.

Applicant(s): Chi Vu et al.
U.S.S.N.: 10/552,302

7. (Withdrawn) The compound of claim 2, wherein R¹ is alkyl, cycloalkyl, aryl, heterocycloalkyl, or heteroaryl.
8. (Withdrawn) The compound of claim 7, wherein R¹ is optionally substituted with alkyl, halo, hydroxy, or phenyl.
9. (Withdrawn, Currently Amended) The compound of claim 2, wherein L is  or 
10. (Withdrawn) The compound of claim 1, wherein L is

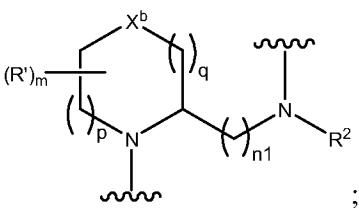


11. (Withdrawn) The compound of claim 10, wherein X^b is -C(R²)(R³)- or -NR²-.

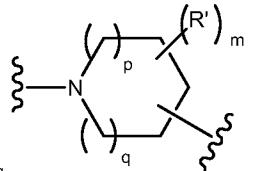
12. (Withdrawn) The compound of claim 11, wherein X^b is -C(R²)(R³)-.

13. (Withdrawn) The compound of claim 12, wherein p is 0-1 and q is 1.

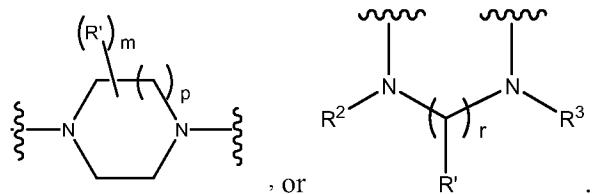
Applicant(s): Chi Vu et al.
U.S.S.N.: 10/552,302

14. (Withdrawn) The compound of claim 13, wherein n1 is 1-4 and n2 is 2-4.
15. (Withdrawn) The compound of claim 14, wherein X¹ is C₁₋₆ alkylene or a bond.
16. (Withdrawn) The compound of claim 14, wherein X² is C₁₋₆ alkylene or a bond.
17. (Withdrawn) The compound of claim 14, wherein Y is -SO₂-, -CO-, -CO₂-, or a bond.
18. (Withdrawn) The compound of claim 14, wherein each of R² and R³ is independently hydrogen or alkyl.
19. (Withdrawn) The compound of claim 14, wherein R¹ is aryl or heteroaryl, each of which being optionally substituted with alkyl, halo, hydroxy, or phenyl.
20. (Withdrawn) The compound of claim 14, wherein each of X¹ and X² is independently C₁₋₆ alkylene or a bond; Y is -SO₂-, -CO-, -CO₂-, or a bond; each of R² and R³ is independently hydrogen or alkyl; and R¹ is aryl or heteroaryl, each of which being optionally substituted with alkyl, halo, hydroxy, or phenyl.
21. (Withdrawn) The compound of claim 14, wherein L is  ; X¹ is a bond; X² is C₁₋₄ alkylene; Y is a bond; each of R² and R³ is independently hydrogen or alkyl; R¹ is aryl or heteroaryl, each of which being optionally substituted with alkyl, halo, hydroxy, or phenyl; A is heteroaryl; and B is N.

Applicant(s): Chi Vu et al.
U.S.S.N.: 10/552,302



22. (Withdrawn) The compound of claim 1, wherein L is



23. (Withdrawn) The compound of claim 22, wherein X¹ is C₁₋₆ alkylene, C₂₋₆ alkynylene, or a bond.

24. (Withdrawn) The compound of claim 22, wherein X² is C₁₋₆ alkylene or a bond.

25. (Withdrawn) The compound of claim 22, wherein Y is -SO₂-, -CO-, -CO₂-, or a bond.

26. (Withdrawn) The compound of claim 22, wherein each of R² and R³ is independently hydrogen or alkyl.

27. (Withdrawn) The compound of claim 22, wherein R¹ is alkyl, cycloalkyl, aryl, heterocycloalkyl, or heteroaryl.

28. (Withdrawn) The compound of claim 27, wherein R¹ is optionally substituted with alkyl, halo, hydroxy, or phenyl.

29. (Withdrawn) The compound of claim 22, wherein X¹ is C₁₋₆ alkylene, C₂₋₆ alkynylene, or a bond; X² is C₁₋₆ alkylene or a bond; Y is -SO₂-, -CO-, -CO₂-, or a bond; each of R² and R³ is independently hydrogen or alkyl; R¹ is alkyl, cycloalkyl, aryl, heterocycloalkyl, or heteroaryl, each of which being optionally substituted with alkyl, halo, hydroxy, or phenyl; A is heteroaryl; and B is N.

Applicant(s): Chi Vu et al.
U.S.S.N.: 10/552,302

29. (Withdrawn, Currently Amended) The compound of claim 1, said compound being
2-furan-2-yl-N⁷-[1-(5-methyl-isoxazol-3-ylmethyl)-pyrrolidin-2-ylmethyl]-
[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine;
2-furan-2-yl-N⁷-methyl-N⁷-[1-(5-methyl-isoxazol-3-ylmethyl)-pyrrolidin-2-ylmethyl]-
[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine;
N⁷-[1-(2-chloro-6-fluoro-benzyl)-pyrrolidin-2-ylmethyl]-2-furan-2-yl-[1,2,4]triazolo[1,5-
c]pyrimidine-5,7-diamine;
2-furan-2-yl-N⁷-(1-pyridin-4-ylmethyl-pyrrolidin-2-ylmethyl)-[1,2,4]triazolo[1,5-
c]pyrimidine-5,7-diamine;
N⁷-[1-(2,6-dichloro-pyridin-4-ylmethyl)-pyrrolidin-2-ylmethyl]-2-furan-2-yl-
[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine;
N⁷-[1-(2-chloro-pyridin-4-ylmethyl)-pyrrolidin-2-ylmethyl]-2-furan-2-yl-[1,2,4]triazolo[1,5-
c]pyrimidine-5,7-diamine;
N⁷-[1-(2,3-difluoro-benzyl)-pyrrolidin-2-ylmethyl]-2-furan-2-yl-[1,2,4]triazolo[1,5-
c]pyrimidine-5,7-diamine;
2-furan-2-yl-N⁷-methyl-N⁷-[1-(2,3,6-trifluoro-benzyl)-piperidin-2-ylmethyl]-
[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine;
N⁷-[1-(2,4-difluoro-benzyl)-piperidin-2-ylmethyl]-2-furan-2-yl-N⁷-methyl-
[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine;
N⁷-[1-(2,6-difluoro-benzyl)-piperidin-2-ylmethyl]-2-furan-2-yl-N⁷-methyl-
[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine;
N⁷-[1-(2-fluoro-benzyl)-pyrrolidin-2-ylmethyl]-2-furan-2-yl-N⁷-methyl-[1,2,4]triazolo[1,5-
c]pyrimidine-5,7-diamine;
N⁷-[1-(5-chloro-furan-2-ylmethyl)-pyrrolidin-2-ylmethyl]-2-furan-2-yl-N⁷-methyl-
[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine;
N⁷-(1-benzofuran-2-ylmethyl-pyrrolidin-2-ylmethyl)-2-furan-2-yl-N⁷-methyl-
[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine;

Applicant(s): Chi Vu et al.
U.S.S.N.: 10/552,302

N^7 -[1-(5-chloro-1-methyl-3-trifluoromethyl-1H-pyrazol-4-ylmethyl)-pyrrolidin-2-ylmethyl]-2-furan-2-yl- N^7 -methyl-[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine;
 N^7 -[1-(2,3-difluoro-benzyl)-pyrrolidin-2-ylmethyl]-2-furan-2-yl- N^7 -methyl-[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine;
2-furan-2-yl- N^7 -methyl- N^7 -(1-pyridin-2-ylmethyl-pyrrolidin-2-ylmethyl)-[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine;
2-furan-2-yl- N^7 -methyl- N^7 -(1-pyridin-3-ylmethyl-pyrrolidin-2-ylmethyl)-[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine;
2-furan-2-yl- N^7 -methyl- N^7 -(1-pyridin-4-ylmethyl-pyrrolidin-2-ylmethyl)-[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine;
 N^7 -[1-(6-chloro-pyridin-3-ylmethyl)-pyrrolidin-2-ylmethyl]-2-furan-2-yl- N^7 -methyl-[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine;
2-furan-2-yl- N^7 -methyl- N^7 -[1-(2,3,5,6-tetrafluoro-benzyl)-pyrrolidin-2-ylmethyl]-[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine;
1-(5-amino-2-furan-2-yl-[1,2,4]triazolo[1,5-c]pyrimidin-7-ylethynyl)-cyclopentanol;
1-(5-amino-2-furan-2-yl-[1,2,4]triazolo[1,5-c]pyrimidin-7-ylethynyl)-cyclohexanol;
~~4-(5 amino 2 furan 2 yl [1,2,4]triazolo[1,5 c]pyrimidin 7 yl) 2 phenyl but 3 yn 2 ol;~~
7-(3-cyclohexyl-prop-1-ynyl)-2-furan-2-yl-[1,2,4]triazolo[1,5-c]pyrimidin-5-ylamine;
7-{3-[4-(2,4-difluoro-phenyl)-piperazin-1-yl]-prop-1-ynyl}-2-furan-2-yl-[1,2,4]triazolo[1,5-c]pyrimidin-5-ylamine;
7-{3-[4-(2,4-difluoro-phenyl)-piperazin-1-yl]-propyl}-2-furan-2-yl-[1,2,4]triazolo[1,5-c]pyrimidin-5-ylamine;
 N^7 -{2-[4-(2,4-difluoro-phenyl)-piperazin-1-yl]-ethyl}-2-furan-2-yl-[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine;
2-furan-2-yl- N^7 -{2-[4-(2,4,6-trifluoro-phenyl)-piperazin-1-yl]-ethyl}-[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine;
 N^7 -{2-[4-(2-fluoro-phenyl)-piperazin-1-yl]-ethyl}-2-furan-2-yl-[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine;
 N^7 -{2-[4-(2,5-difluoro-phenyl)-piperazin-1-yl]-ethyl}-2-furan-2-yl-[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine;

Applicant(s): Chi Vu et al.
U.S.S.N.: 10/552,302

2-furan-2-yl-N⁷-methyl-N⁷-[2-(4-phenyl-piperazin-1-yl)-ethyl]-[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine;

N⁷-{2-[4-(2,4-difluoro-phenyl)-piperazin-1-yl]-ethyl}-2-furan-2-yl-N⁷-methyl-[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine; and

2-furan-2-yl-N⁷-methyl-N⁷-{2-[4-(2,4,6-trifluoro-phenyl)-piperazin-1-yl]-ethyl}-[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine.

30. (Withdrawn) The compound of claim 1, said compound being

2-furan-2-yl-N⁷-[1-(5-methyl-isoxazol-3-ylmethyl)-pyrrolidin-2-ylmethyl]-[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine;

2-furan-2-yl-N⁷-methyl-N⁷-[1-(5-methyl-isoxazol-3-ylmethyl)-pyrrolidin-2-ylmethyl]-[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine;

N⁷-[1-(2-chloro-6-fluoro-benzyl)-pyrrolidin-2-ylmethyl]-2-furan-2-yl-[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine;

N⁷-[1-(2,6-dichloro-pyridin-4-ylmethyl)-pyrrolidin-2-ylmethyl]-2-furan-2-yl-[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine;

N⁷-[1-(5-chloro-furan-2-ylmethyl)-pyrrolidin-2-ylmethyl]-2-furan-2-yl-N⁷-methyl-[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine;

N⁷-(1-benzofuran-2-ylmethyl-pyrrolidin-2-ylmethyl)-2-furan-2-yl-N⁷-methyl-[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine;

N⁷-[1-(6-chloro-pyridin-3-ylmethyl)-pyrrolidin-2-ylmethyl]-2-furan-2-yl-N⁷-methyl-[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine;

2-furan-2-yl-N⁷-methyl-N⁷-[1-(2,3,5,6-tetrafluoro-benzyl)-pyrrolidin-2-ylmethyl]-[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine;

1-(5-amino-2-furan-2-yl-[1,2,4]triazolo[1,5-c]pyrimidin-7-ylethynyl)-cyclopentanol;
1-(5-amino-2-furan-2-yl-[1,2,4]triazolo[1,5-c]pyrimidin-7-ylethynyl)-cyclohexanol;

7-(3-cyclohexyl-prop-1-ynyl)-2-furan-2-yl-[1,2,4]triazolo[1,5-c]pyrimidin-5-ylamine;

7-{3-[4-(2,4-difluoro-phenyl)-piperazin-1-yl]-prop-1-ynyl}-2-furan-2-yl-[1,2,4]triazolo[1,5-c]pyrimidin-5-ylamine;

Applicant(s): Chi Vu et al.
U.S.S.N.: 10/552,302

$N^7\{-2-[4-(2,4-difluoro-phenyl)-piperazin-1-yl]-ethyl\}-2-furan-2-yl-[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine;$
 $2-furan-2-yl-N^7\{-2-[4-(2,4,6-trifluoro-phenyl)-piperazin-1-yl]-ethyl\}-[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine;$
 $N^7\{-2-[4-(2,4-difluoro-phenyl)-piperazin-1-yl]-ethyl\}-2-furan-2-yl-N^7\text{-methyl-[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine; and}$
 $2-furan-2-yl-N^7\text{-methyl-}N^7\{-2-[4-(2,4,6-trifluoro-phenyl)-piperazin-1-yl]-ethyl\}-[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine.$

31. (Withdrawn) The compound of claim 1, said compound being
 $2-furan-2-yl-N^7\text{-[1-(5-methyl-isoxazol-3-ylmethyl)-pyrrolidin-2-ylmethyl]-[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine;}$
 $2-furan-2-yl-N^7\text{-methyl-}N^7\text{-[1-(5-methyl-isoxazol-3-ylmethyl)-pyrrolidin-2-ylmethyl]-[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine;}$
 $N^7\text{-[1-(2-chloro-pyridin-4-ylmethyl)-pyrrolidin-2-ylmethyl]-2-furan-2-yl-[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine;}$
 $N^7\text{-[1-(5-chloro-furan-2-ylmethyl)-pyrrolidin-2-ylmethyl]-2-furan-2-yl-N^7\text{-methyl-[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine;}}$
 $N^7\text{-(1-benzofuran-2-ylmethyl-pyrrolidin-2-ylmethyl)-2-furan-2-yl-N^7\text{-methyl-[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine;}}$
 $7\text{-(3-cyclohexyl-prop-1-ynyl)-2-furan-2-yl-[1,2,4]triazolo[1,5-c]pyrimidin-5-ylamine;}$
 $7\text{-\{3-[4-(2,4-difluoro-phenyl)-piperazin-1-yl]-prop-1-ynyl\}-2-furan-2-yl-[1,2,4]triazolo[1,5-c]pyrimidin-5-ylamine;}$
 $N^7\{-2-[4-(2,4-difluoro-phenyl)-piperazin-1-yl]-ethyl\}-2-furan-2-yl-[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine; and$
 $N^7\{-2-[4-(2,4-difluoro-phenyl)-piperazin-1-yl]-ethyl\}-2-furan-2-yl-N^7\text{-methyl-[1,2,4]triazolo[1,5-c]pyrimidine-5,7-diamine.}$

32. (Withdrawn) A pharmaceutical composition comprising a compound of claim 1 and a pharmaceutically acceptable carrier.

Applicant(s): Chi Vu et al.
U.S.S.N.: 10/552,302

33. (Withdrawn) A pharmaceutical composition comprising a compound of claim 29 and a pharmaceutically acceptable carrier.
34. (Withdrawn) A method of modulating the A_{2a} adenosine receptor signaling pathways in a subject, the method comprising administering to said subject with an effective amount of a compound of claim 1.
35. (Withdrawn) A method of modulating the A_{2a} adenosine receptor signaling pathways in a subject, the method comprising administering to said subject with an effective amount of a compound of claim 29.
36. (Withdrawn) A method of inhibiting the A_{2a} adenosine receptor in a cell, the method comprising the step of contacting said cell with an effective amount of a compound of claim 1.
37. (Withdrawn) A method of inhibiting the A_{2a} adenosine receptor in a cell, the method comprising the step of contacting said cell with an effective amount of a compound of claim 29.
38. (Withdrawn) A method of treating or preventing a disorder or disease in a subject wherein the cause or syndrome of the disorder or disease is associated with an activation of the A_{2a} adenosine receptor, the method comprising the step of administering to said subject an effective amount of a compound of claim 1.
39. (Withdrawn) A method of treating or preventing a disorder or disease in a subject wherein the cause or syndrome of the disorder or disease is associated with an activation of the A_{2a} adenosine receptor, the method comprising the step of administering to said subject an effective amount of a compound of claim 29.

Applicant(s): Chi Vu et al.
U.S.S.N.: 10/552,302

40. (Withdrawn) The method of claim 38 or 39, wherein the disorder or disease is selected from the group consisting of Parkinson's disease, progressive supranuclear palsy, multiple system atrophy, Alzheimer's disease, depression, AIDS encephalopathy, multiple sclerosis, amyotrophic lateral sclerosis, migraine, attention deficit disorder, narcolepsy, sleep apnea that results in excessive daytime sleepiness, Huntington's disease, cerebral ischemia, brain trauma, hepatic fibrosis, cirrhosis, and fatty liver.
41. (Withdrawn) The method of claim 40, wherein the disorder or disease is Parkinson's disease.
42. (Withdrawn) The method of claim 40, wherein the disorder or disease is depression.
43. (Withdrawn) The method of claim 40, wherein the disorder or disease is migraine.
44. (Withdrawn) The method of claim 40, wherein the disorder or disease is hepatic fibrosis.
45. (Withdrawn) The method of claim 40, wherein the disorder or disease is Huntington's disease.